

Getting The Hatch to Latch



Memory Wire Activated Hatch Vent

Where my 2008 C6 had a motorized pull down motor to latch the hatch, GM made a very big deal of using a patented idea they have been working on for years, a Shape-Memory Wire Actuated Vent for the C7.

This technology has been around since 1962, when the U.S. Naval Ordnance Laboratory observed the properties of nickel titanium (NiTi) alloy and branded it Nitinol. The story goes that the Navy presented a badly bent sample of the alloy at a laboratory management meeting. A technical director

wanted to see what would happen if the sample was subjected to heat, so he held his pipe lighter underneath it. To the amazement of those attending the meeting, the sample stretched back to its original shape.

Use on the C7

In the late '90s, GM became interested in the potential benefits the alloy and it's R&D teams started exploring ways to use the technology. For the past several years, prototype systems were developed that could last the 10-year vehicle lifespan and perform well across a temperature range of -22 to 185 degrees F.

Soon after the release of the Corvette Z06 in 2006, some owners were complaining that pressure inside the cabin was making it difficult for them to close the rear hatch. The base Corvette coupe, utilized a cinching latch to address the problem. The hatch drops into the primary latch position, and then a motor yanks it down, compresses all the seals and struts, and gets it into final latching position. That is a bulky mass mechanism so it was initially omitted from C6 Z06 models. The C7 team wanted the weight reduction so a memory wire activated vent was used instead of the motorized pull down employed in the C6.

The weight savings achieved of only 1.1 pounds and doesn't justify the marketing hype this feature received! It also doesn't work for all cars and for some of us, after 1 ½ years still require leaving a door open to have sufficient vent area to latch!

This report discusses a Window Valet that plugs into the OBD II and allows remotely lowering the windows using the key FOB to increase the vented area allowing the hatch to latch!

At the end is a discussion of the irrational seat memory software used in the M7, and a simple workaround!

Photo Sequence

Unlike some sports cars the Corvette has a large hatch area that holds a great deal. Mine is a Daily Driver and I use it all the time for groceries, carrying boxes to FedEx etc. This picture is from the first C7 I saw after paying for one several months before! This was a prototype at Laguna Seca in August of 2013 before production started.

This fellow was moving to the next venue.



Don't let the cubic foot specs for the C7 versus the C6 confuse the issue. GM changed their method of measure in 2014. They no longer quote the number of ping pong balls the area can hold! The C7 hatch holds more than a Cadillac CTS when compared using these new measurements. This is my hatch with a large Nylon organizer. It folds flat when not in use and I made a wooded separator that provides 4 sections when needed. It also lays flat. See Rear Cargo Area PDF (link at end.)

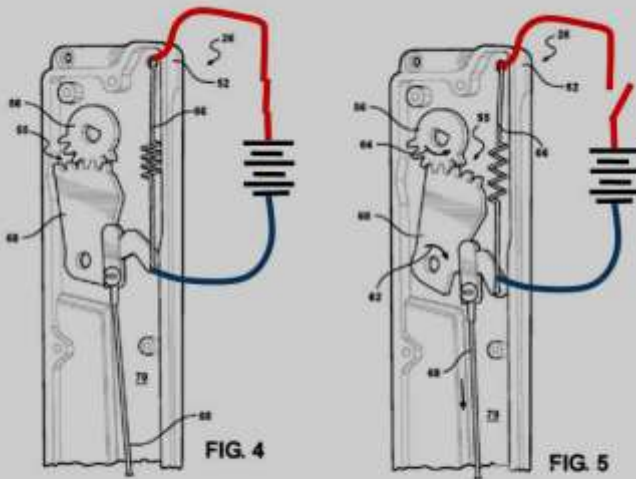


Note: If your vent is not providing enough area, do not push in the center of the hatch frame to latch. A recent forum poster, who was using that technique, reported not just his paint cracking - the hatch frame cracked! Museum Delivery folks were told to use 2 hands and press at the peaks near the window edge.

To avoid using the "heavy" motor to pull down the latch for final latching, GM developed a memory wire activated vent that lets the air out as it compresses when the hatch is closed. Sounds like a good idea and was promoted with a great deal of hype. Unfortunately for some cars it does not provide enough venting volume. Mine is over 1½ years old and still won't latch without a door open.

I tried pushing to latch when I first got the car and watched as the bottom of the hatch frame was bending! I stopped. It was later reported by folks attending Museum Delivery that you should not push on the hatch center as paint cracks were reported! A large forum dealer mentioned 20% of cars he sold had paint cracks!

Shape-Memory Wire Activated Vent



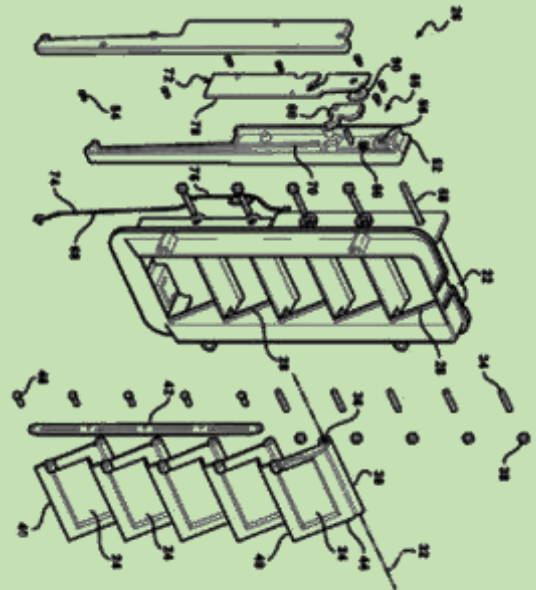
Made from Alloys Like NiTi and AlCuNi

Even though the memory wire vent does not work for all cars and a fix was apparently not simple (whatever the issue is, GM has never said) they went back to a motorized pull down like the C6 for the 2016 model!

The memory wire mechanism is of interest. A wire made into a spring, when heated by a small electrical current contracts. When the current is removed it cools and lengthens.

Using a simple geared arrangement this movement is used to open louvers in a vent on the rear panel.

You can watch to see if your vent is working thru a large rectangular hole behind the license plate. Just remove the plate and with a flashlight look thru and you'll see the vent. Then push the hatch opening button above the plate and watch the vent louvers open. When you close the hatch the louvers close. My vent worked as designed, it is just not large enough, like many other C7's!



The vent does work for some cars and those of us where it doesn't were told in forum posts, *"Just do as shown in this video."* It was made by a Vette salesman on a car where it did work. Most forum posters were being very serious and trying to help. Some just said *"You don't know what you're doing, mine works fine!"*

Some suggested it got better with time and *"Just wait until the hatch seal breaks in."* My hatch seal is as soft as a baby's bottom and after 1 1/2 years still no help!

Tried a number of tests to get it to latch. Tried high and low force from maximum height as well as from as low as possible. No help in latching. However if I left my door open it latched with very little force! In fact that has been my solution up to now. I can stand just behind my drivers open door and with my right had push lightly on the corner of the open hatch and it latches every time. Just takes thinking ahead. No big deal since 95% of the time when getting into the hatch the door will have to be opened before or after. Just think ahead and close the hatch before the door!



Being mechanically inclined I tried several other things. Was it that some cars had different hatch alignment, is that why they worked? I tried adjusting the hatch stops to a point of misalignment both high and low. No help with latching.

I stopped worrying about it and would post on Vette forums so new owners did not think "it was them" or worse press in the center of the hatch frame and after flexing enough times have the paint crack!

In fact if I press on the edges of the window it still takes quite a bit of force and the hatch frame still starts to bend so I do not latch that way.

Finally a solution or in my case an option! The Window Valet is a patented device that uses the key FOB to lower and raise the windows! It has been available for older Vettes and was just released for the C7. They are available at: <http://TopDownTech.com>



Even for a non-DIY person the device simply plugs into the OBD II port near the edge of the driver's side dash bottom. It is very small and sits up high enough so it will not bother your leg. The instructions state: "It does NOT reprogram any of the cars computers! Just plug it in and it works!"

Installation:



The Window Valet™ plugs into the diagnostics port, located along the edge of the dash trim, above the driver's leg area. There's no configuration required. Just plug it in! The Window Valet™ does NOT reprogram any of the car's computers. The unit must be plugged in for the features to be available.

Usage:

To lower the windows, press the stock remote UNlock button three times. To raise the windows, press the remote lock button three times. (Or to prevent the car from blowing its horn multiple times, unlock-unlock-lock may be used to raise the windows.) For the feature to activate, the buttons must be pressed in rapid succession, with less than one second between two sequential "clicks."

Special Window Venting Feature:

The "window venting" feature allows you to use the remote to leave the windows down about half-an-inch for airflow on hot days. To use this feature, simply raise the windows with the Window Valet™ and then, once the windows are up, press lock one additional time. The windows will lower a fraction of an inch. If the windows were already up, press lock three times, wait a few seconds, then press lock again and the windows should vent. This feature, just like the remote window control, does not require any additional configuration.

It is very simple and instructions are simple as well. Really nothing to do but plug it in. If you don't like the horn blowing twice when you shut the windows they have a procedure to stop it. I didn't bother as the horn doesn't bother me and I know the windows have gone up.

The horn doesn't blow when lowering the windows. So if you're getting into the car lower the window first, close the hatch and when you get into the car raise the windows with the door buttons. In fact one reason I bought the device is to lower the windows before entering in the hot summer!

As stated, it is very simple to use. Just press the door open button three times fairly quickly, the instructions say within a second, which is no problem.

To close them remotely do the same with the lock button.

HOW DID IT WORK HELPING LATCHING THE HATCH??

GREAT! In fact it was exactly the same as with the door open. I first tried to close have the hatch latch with the doors and windows close. No latch as expected using the GM handhold and a lot of force.

Opened the windows with 3 clicks of the door open button and using the same hand hold, with much less force and it latched fine!

It will definitely be a help on hot summer days when getting into the parked car. I'll use it to open the windows, get in and drive. When the car is cools off, I'll raise the windows using the door buttons.





M7 SEAT MEMORY IRRATIONALITY

My C6 seat memory was very logical and worked fine. Why it was changed for the C7? GM has never said.

The first irrationality is when the "Automatic Recall" is set to "enable," when you open the door the seat moves to the memorized position for the key FOB in your pocket. It's fun to watch and wonder who can use that feature "*Superman, who's faster than a speeding bullet!*"

For logical use, it must be turned OFF!

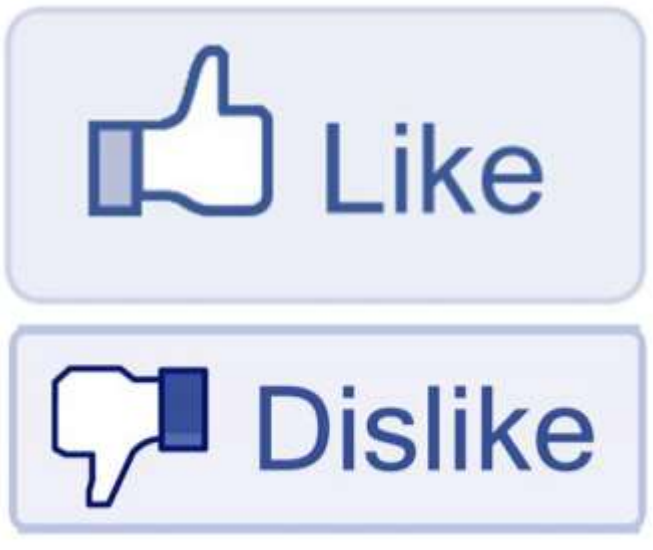
The next is also irrational IMO. For a manual car it requires the car to be started to have one touch of the button return the seat, steering wheel and mirrors to their memorized position. But for a manual car many require the seat to be forward to depress the clutch fully to start the car! Hmm, a Catch 22!! Can't start the car without the seat forward and can't get the seat forward without the car started - unless you hold in the button!



I developed a method to solve the issue when I first got the C7 in October 2013. My wife always accuses me of not multitasking! So I multitask! First I grab the seat belt buckle with my right hand when my seat is fully back (easier to reach then.) Second, while pulling the belt over to buckle with my right hand I use a finger on my left hand to hold in my memory button! Then I can push in the clutch and press the start button once! Works for me.

In late 2014, over a year after I got my car, GM came up with what they call "alternate software" that the dealer can install. Note they do not call it a fix (which I was hoping would be a copy of the C6! It's not!) It requires the first operation to be pressing the start key, which you do with your right hand. The car still doesn't start but the seat moves to the programmed position of the key FOB in your pocket etc. Then you can depress the clutch and the start key again.





Some folks like the “Alternate Software” but I don’t. It takes two pushes of the start switch and requires using my right hand, which is the one, I have learned to use for over 1 year of living with the system before they added the “Alternative.”

My method is quick and gets the belt buckled and car started faster. But that is my opinion.

I find it interesting that if you move the seat forward first, some forum posters have difficulty reaching for the seat belt! That is why I like having the seat fully back when I reach for the buckle.

Some try to use the “Belt Guide” that the Owner’s Manual clearly states was designed for use by children! In fact some have come up with ways to hold the belt in the guide, like using shrink tubing! Others have said when the belt is kept in the “Guide” it hits the door panel when the belt is not in use and that abrades the leather! Fact is the guide should not be used.

With my starting procedure you can reach for the belt as the first step in starting!



We’ll see if for 2016 they revert to the logical C6 seat memory software like they did for the hatch latching!

I’ve jokingly said GM must have outsourced the M7 seat memory software to a young programmer who doesn’t have a car! How else do you explain not using the tested and accepted C6 software or having a seat go the programmed position when the door is opened!!

After seeing the “alternate software” and it does not just copy what was done on the C6, just reinforces that the joke may be real! Perhaps they didn’t get the original source code!

Other Stingray PDF's Available:



Some 37 items discuss improvements or information about the Stingray function and/or esthetics. Some are minor and others, like the genuine carbon fiber side skirts, include detailed install information.

Below are the PDF's available. Click on picture (may need Ctrl pressed.) Or just copy and paste the PDF info (Blue type) into your browser. Or email me at GUtrachi@aol.com and state the title desired, shown in Yellow:

Rusty C7 Muffler

Why the C7 muffler is rusted and a simply way to make rust turn matte black.

Bottom pic rusted, top pic treated

http://netwelding.com/Muffler_Rust.pdf



Change C7 Oil

WHY change your own oil and HOW to do it

Revised, includes C7 Lifting Methods

http://netwelding.com/Changing_Oil.pdf



Latch Hatch

Window Valet Helps 2014/2015 Latch

Includes M7 Crazy Seat Memory Recall

http://netwelding.com/Hatch_Latch.pdf



C7 Carbon Fiber Side Skirts

How to install side skirts with jacking information for DIY's without lifts

http://netwelding.com/Side_Skirts.pdf



Carbon Fiber Splitter w/End Plates

How to install Splitter & Nylon bra fit

http://netwelding.com/CF_Splitter.pdf



Removing GM Plastic Film

How To Remove The Rocker Panel Film

http://netwelding.com/Rocker_Panel_Film.pdf



C7 Mirrors 2 3/8" Wider Than C6

Device assists with 8 foot garage door

http://netwelding.com/Narrow_Garage_Device.pdf



Mirror Proximity Alarm

Limit switch alarm warns when passenger mirror is too close to door frame

http://netwelding.com/Mirror_Proximity_Alarm.pdf



Making Jacking Pads for C7

Jacking Pads must 2 1/2 inch max OD. Made four. Also Hockey Puck pad and 2 1/2 inch OD x 2 inch high pads bought after installing side skirts.

http://netwelding.com/Jacking_pads.pdf



C7 Radar Power

The C7 cannot tap the mirror or sun visor for power !

http://netwelding.com/Radar_Detector_Power.pdf



C7 Belt Rattle

Passenger seat belt rattles against the seat back. The solution, add a shoulder belt pad.

http://netwelding.com/Eliminate_Rattle.pdf



Aluminum C7 Chassis and Weld Repair

The C7 has an all aluminum chassis, made from 117 welded pieces

http://netwelding.com/Aluminum_Chassis.pdf



Carbotech Ceramic Brake Pads

The Z51 has very dusty brakes. These pads help!

http://netwelding.com/Ceramic_Pads.pdf



C7 License Plate Frame;

Must Meet South Carolina Law

http://netwelding.com/License_Plate_Frame.pdf



Manage C7 Spilled Gas

Protect the side of the C7 when filling up with gas

http://netwelding.com/Manage_Spilled_Gas.pdf



C7 License Plate & Cargo Lights

LED license plate light & cargo area bulbs are brighter and whiter

http://netwelding.com/License_Plate_Light.pdf



C7 Rear Cargo Area

Rear cargo area needs storage device and rear protector

http://netwelding.com/Rear_Cargo_Area.pdf



C7 Door Panel Protector

protector plate added to prevent scuffing of door when exiting

http://netwelding.com/Door_Panel_Protector.pdf



C7 Improved Cup Holder

A solution to the cup holder spilling under hard braking or sharp turns.

http://netwelding.com/Improved_cup_Holder.pdf



C7 Wheel Chatter/Hop

Why sharp, low speed turns with cold tires causes the front tires to chatter/hop.

http://netwelding.com/Wheel_Chatter.pdf



Carbon Fiber Grille Bar

Install genuine carbon fiber grille bar overlay

http://netwelding.com/CF_Grille_Bar.pdf



Jacking a C7 Vette

Safely jacking either front only or back and front

http://netwelding.com/Jacking_A_C7.pdf



Deer Whistle Installed on C7

Do they work? Plus Install Info

http://netwelding.com/Deer_Whistle.pdf



C7 Battery Issues

Even after using a GM type charger and showing fully charged, voltages were still low!

http://netwelding.com/Battery_Issues.pdf



C7 Splash Guards

GM offers splash guards for the C7 Corvette. An easy DIY installation.

http://netwelding.com/Splash_Guard.pdf



C7 Blind Spot Mirror

Smaller rear and side windows cause C7 blind spots. Small "blind spot mirrors" help

http://netwelding.com/Blind_Spot.pdf



C7 Skid Pad Protector

After the air dam, the aluminum "skid pad" hits driveway ramps etc. Plastic protector helps.

http://netwelding.com/Skid_Pad_Protector.pdf



C7 Wheel Locks

Wheel locks, torqued to required 100 ft-lbs, help protect your expensive wheels from theft.

http://netwelding.com/Wheel_Locks.pdf



C7 OnStar Lights

The OnStar LED's in the rear view mirror, at a quick glance, look like a police car flashing light! This is a fix.

http://netwelding.com/OnStar_Lights.pdf



C7 Skip Shift Eliminator

Skip Shift Eliminator install with suggestions on jacking a C7.

http://netwelding.com/Skip_shift_Eliminator.pdf



C7 Catch Can & Clean Oil Separator

Direct inject engines like the LT1, are particularly subject to "coking." What is Coking and how to reduce the potential?

http://netwelding.com/Catch_Can.pdf



C7 Round Shift Knob

A round shift knob shortens throw.

http://netwelding.com/Shift_Knob.pdf



C7 Stingray Sill Plate

Stingray sill plate replaces original.

http://netwelding.com/Sill_Plate.pdf



C7 Nylon Bra

Nylon Bra Stops Bugs on Front and Grill.

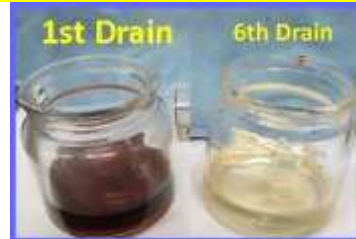
http://netwelding.com/Nylon_Bra.pdf



C7 Clutch Fluid Change

Clutch fluid after 3000 miles gets dirty

http://netwelding.com/Clutch_Fluid.pdf



Carbon Fiber Hood Vent

Replaces Plastic Hood Vent

http://netwelding.com/Hood_Vent.pdf



Cold Air Intake

Low Restriction Air Filter & Duct

http://netwelding.com/Cold_Air_Intake.pdf



May Be Of Interest:

Engineering a ProStreet Rod

*How Our '34 ProStreet Rod Was Designed and Built
8.2 Liter Engine, 4 Wheel Disk Brakes & Coilover*

<http://netwelding.com/Engineering%20Street%20Rod%203-08.pdf>

